CLAIMS

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1. An apparatus performing the addition of a PKG recoded number, said apparatus comprising:

a circuitry configured to receive at least a first value and a second

4 value, wherein said second value is a PKG value; and

wherein said circuitry generates a sum value and a carry value.

2. The apparatus of claim 1, wherein said sum value and said

carry value are dual rail encoded values.

3. The apparatus of claim 1, wherein said circuitry further comprises:

a first adder configured to add said first value and said second PKG

value, said first adder generates a PKG value and a carry-out value.

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4. The apparatus of claim 3, wherein said circuitry further

2 comprises:

a second adder configured to add said PKG value from said first

4 adder and a carry in value.

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5. The apparatus of claim 3, wherein said first value is a PKG value.

- 1 6. The apparatus of claim 1, further comprising:
- a recoder configured to convert at least one dual rail encoded value
- 3 into said second PKG value.
- 7. A method for performing the addition of PKG recoded numbers, comprising the steps of:

receiving a first value;

receiving a second PKG value; and

generating a sum value and a carry value from said first value and

said second PKG value.

- 1 8. The method of claim ∇ , further comprising the steps of:
- adding said first value and said second PKG value;
- generating a first result PKG value from said adding; and
- generating a first carry-out value from said adding.
- 1 9. The method of claim 8, further comprising the steps of:
- adding said first result PKG value and a carry-in value;
- generating a final sum value from said adding; and
- generating a final carry-out value from said adding.
 - 10. The method of claim 9, wherein said final sum value and said
- 2 final carry-out value are dual rail encoded values.

- 1 11. The method of claim 8, wherein said first value is a PKG value.
- 1 12. The method of claim 7, further comprising the step of:
- converting at least one dual rail encoded value into said second PKG value.

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- 13. An apparatus for apparatus performing the addition of PKG
- 2 recoded number, said apparatus comprising:
- means for receiving a first value;
- 4 means for receiving a second PKG value; and
- 5 means for generating a sum value and a carry value from said first
- 6 PKG value and said second PKG value.
- 1 14. The apparatus of claim 13, further comprising:
- means for adding said first value and said second PKG value to
- 3 generate a first result PKG value and a first carry-out value.
- 15. The apparatus of claim 14, further comprising:
- 2 means for adding said first result PKG value and a carry-in value to
- 3 generate a final sum value and a final carry-out value.
- 1 16. The apparatus of claim 15, wherein said final sum value and
- 2 said final carry-out value are dual rai encoded values.

- 1 17. The apparatus of claim 15, wherein said first value is a PKG value.
- 18. The apparatus of claim 13, further comprising:
- means for converting at least one dual rail encoded value into said second PKG value.
- 1 19. An apparatus performing the addition of PKG recoded 2 numbers, said apparatus comprising:
- a circuitry configured to receive at least two PKG values; and
 wherein said circuitry generates a PKG value and a carry value.
- 20. A method for performing the addition of PKG recoded numbers, comprising the steps of:
- receiving a first PKG value;
- receiving a second PKG value; and
- generating a PKG sum value and a carry value from said first PKG
- 6 value and said second PKG value.



21. An apparatus for apparatus performing the addition of PKG

recoded number, said apparatus comprising:

means for receiving a first PKG value;

means for receiving a second PKG value; and

means for generating a PKG sum value and a carry value from

6 addition of said first PKG value and said second PKG value.

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